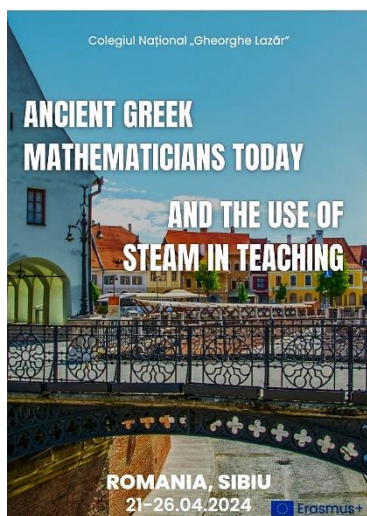




## Proiect Erasmus+

### **"Ancient Greek mathematicians today and the use of STEAM in teaching"**



#### PARTNERS:

- Peetri Lasteaed-Põhikool (Estonia)
- Szkoła Podstawowa im.M.J.Pilsudskiego (Poland)
- Gymnasio Dafnis (Greece)
- Colegiul National „Gheorghe Lazăr” Sibiu (Romania)

## Activities within the Erasmus+ Project

Tuesday, 23.04.2024

#### **Workshops:**

*Mathematical connections in art, music and science*

*"Music is the pleasure the human mind experiences*

*from counting without*

*being aware that it is*

*counting" (Gottfried Leibniz)*

*– games, digital applications, mindmapmaker*



# THALES'S THEOREM

**CONSEQUENCES OF THALES'S THEOREM**

**WHO WAS THALES?**

Thales of Miletus was a pre-Socratic Greek philosopher who contributed to the development of mathematics, astronomy and philosophy. He is considered the father of science.

**EXERCICES**  
Find the value of  $x$ :

**THALES'S THEOREM**

In geometry, Thales's theorem states that if A, B, and C are distinct points on a circle where the line AC is a diameter, the angle  $\angle ABC$  is a right angle.

**LET'S TRY TO FIND OUT WHERE IS A CIRCLE'S CENTER!**

**THE PYRAMIDS & THALES**

The legend says that when Thales visited Egypt, he measured the height of the pyramids by their shadows at the moment when his own shadow was equal to his height.

**CONSEQUENCES OF THALES'S THEOREM**

**THANK YOU!**

**CNGL TEAM**

Fleacă Anastasia, XI I  
 Penteleiciuc Maria, XI I  
 Orza Anamaria, XI I  
 Dachin Andra, XI I  
 Timofte Ana, XI I  
 Iacob Diana, XI I

**coordinating teacher Doriana Dorca**



## About Rhythm and Math

**Rhythm** is like the *heartbeat* of a song. It's the *pattern of sounds and silences* that make music flow smoothly. Just like a heartbeat has a steady beat, music has its own beat too.

**Math** is like a secret ingredient in the recipe of rhythm! Musicians use math to figure out the *timing* of notes and beats in a piece of music. They use *fractions* to divide time into equal parts, creating a steady rhythm.

**Example of the most used note values and break:**

Whole Note (Semibreve)		4 Beats	
Half Note (Minim)		2 Beats	
Quarter Note (Crotchet)		1 Beat	
Eighth Note (Quaver)		1/2 Beat	
Sixteenth Note (Semiquaver)		1/4 Beat	
Thirty-Second Note (Demisemiquaver)		1/8 Beat	

**In a song:**

one note that lasts one beat  $\frac{1}{4}$   $\frac{1}{4}$   $\frac{1}{4}$   $\frac{1}{4}$

out of 4 beats in a measure  $\frac{1}{4}$   $\frac{2}{4}$   $\frac{1}{4}$   $\frac{1}{4}$

this note represents two beats out of the 4 beats in the measure, the fraction that represents it is equivalent to 1/2

There are also breaks that have certain time values!

Half Rest (Minim)		2 Beats	
Quarter Rest (Crotchet)		1 Beat	
Eighth Rest (Quaver)		1/2 Beat	

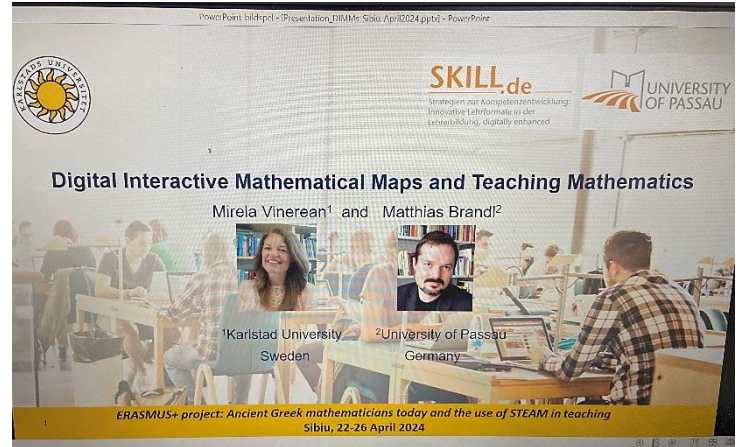
Let's also measure these groups of notes and breaks!

Now let's recreate the beats with our hands!





*Workshops: Dr. Mirela Vinerean Bernhoff,  
Department of Mathematics and Computer  
Science, Karlstad University Sweden  
(coordinating teacher dr. Mirela Vinerean Bernhoff, Delia Șerb)*



## Workshops (teachers)



*Green week activities – Workshop with recycled  
Materials (coordinating teacher Raluca Filip)*





## Volunteer



## Activities within the Erasmus+ Project





## Socialization



### CNGL TEAM

Alexandra Ganea, IX F  
Pustea Horatiu, IX F  
Joarza Mihai, IX F  
Chirila Ella, IX F  
Chialda Sabina, IX F  
Anastase Luca, IX F  
Pascu Matei, IX D  
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Stefania Rusu, X F  
Rianna Tămaș, X F  
Angelina Voicu, X F

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prof. Steliana Anuța Mărginean  
prof. Raluca Filip  
prof. Ana Marinescu  
prof. Delia Șerb  
prof. Mircea Brodețchi  
prof. Ana Maria Bedreagă  
prof. Adina Stănculescu  
librarian Marinela Rusu

**Project coordinator: prof. Stela Negrea**